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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/785,598

02/24/2004

Junwon Lee

87163AEK

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7590

10/05/2005

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EXAMINER

CHOI, JACOB Y

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/785,598

Applicant(s)

LEE ET AL.

Examiner

Jacob Y. Choi

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 20-31, 35, 36, 38, 39, 45 and 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 32-34, 37 and 40-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/04, 3/04, 5/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

The information disclosure statement (IDS) submitted on 2/20/2004, 3/19/2004, & 5/16/2005 is considered by the examiner.

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claim 32 is objected to because of the following informalities: the term "its" in claim 32 is a relative term, which renders the claim indefinite. The term "its" is not defined by the claim, the specification does not provide a standard for ascertaining the

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requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Appropriate correction is required.

Claim Rejections - 35 USC § 102

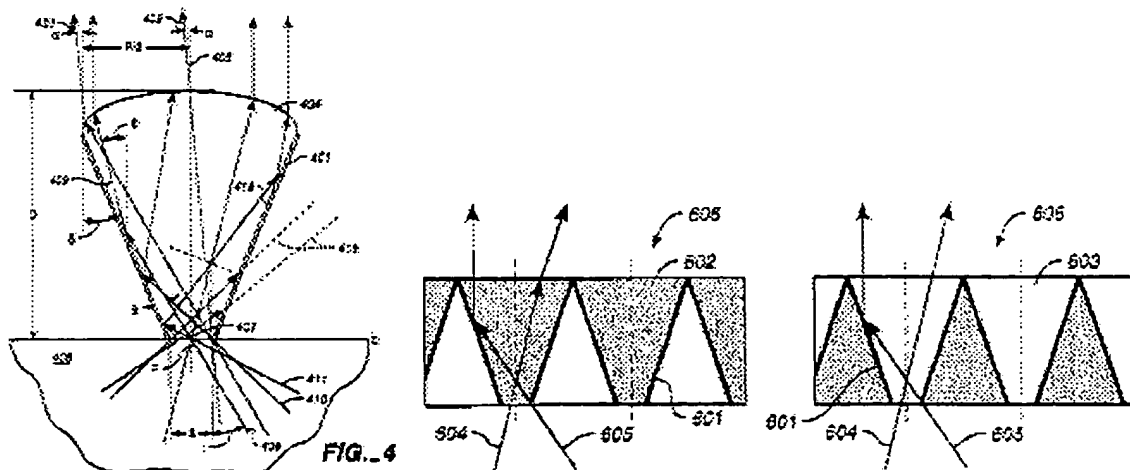
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-19, 32-34, & 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Ge et al. (USPN 5,839,812).

Regarding claim 1, Ge et al. discloses an array of tapered structures (the mirror reflective cones), each the tapered structure having a light input aperture (e.g., Figure 6b) and a larger light output aperture, wherein the inner surface of each the tapered structure is adapted to reflect off-axis light incident and at the input aperture to the output aperture (e.g., Figure 3).



Note: claims in the pending application should be given their broadest reasonable interpretation. In *re* Pearson, 181 USPQ 641 (CCPA 1974). Also, it has been held that the recitation that an element(s) is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense, *In re Hutchison*, 69 USPQ 138. The recitation a brightness enhancement film has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Regarding claim 2, Ge et al. discloses the array of tapered structures comprises an array of hollow, reflective cavities extending between a light input surface and a light output surface.

Regarding claim 3, Ge et al. discloses the array of tapered structures comprise an array of concentrators extending between an input aperture on an input surface and an output aperture on an output surface, each the concentrator having a generally parabolic shape (e.g., column 2, lines 30-45), wherein the input surface is in contact with a light guide plate, and each the concentrator has an index of refraction

substantially equal to the index of refraction of the light guide plate (air, refractive index $n=1$, transparent material, refractive index $n=1.5$).

Regarding claim 4, Ge et al. discloses in a cross-section parallel to the output aperture, the tapered structure is substantially circular (e.g., column 2, lines 30-45).

Regarding claim 5, Ge et al. discloses in a cross-section parallel to the output aperture, the tapered structure is substantially hexagonal (e.g., column 2, lines 30-45).

Regarding claim 6, Ge et al. discloses in a cross-section parallel to the output aperture, the tapered structure is substantially rectangular (e.g., column 2, lines 30-45).

Regarding claim 7, Ge et al. discloses the off-axis light is provide by a light guide plate (e.g., 406).

Regarding claim 8, Ge et al. discloses an array of hollow, reflective cavities extending between a light input surface and a light output surface.

Regarding claim 9, Ge et al. discloses at least one of the hollow, reflective cavities comprises a curved sidewall (e.g., column 2, lines 30-45).

Regarding claim 10, Ge et al. discloses in a cross-section parallel to the output surface, the hollow reflective cavities are substantially circular (e.g., column 2, lines 30-45).

Regarding claim 11, Ge et al. discloses in a cross-section parallel to the output surface, the hollow reflective cavities are substantially circular (e.g., column 2, lines 30-45).

Regarding claim 12, Ge et al. discloses the side-wall of at least one of the reflective cavities comprises a reflective coating (e.g., column 6, lines 1-15).

Regarding claim 13, Ge et al. discloses at least two of the hollow, reflective cavities differ dimensionally from each other.

Regarding claim 14, Ge et al. discloses the input surface comprises a transparent substrate (light guide).

Regarding claim 15, Ge et al. discloses the output surface comprises a transparent substrate (lens).

Regarding claim 16, Ge et al. discloses the film comprises a reflective substrate (e.g., 707).

Regarding claim 17, Ge et al. discloses each of the hollow, reflective cavity has an input aperture and an output aperture, the output aperture being larger in area than the input aperture (e.g., Figure 4).

Regarding claim 18, Ge et al. discloses an array of hollow, reflective cavities extending between a light input surface and a light output surface, wherein each the hollow reflective cavity has an input aperture for accepting incident off-axis light and a larger output aperture.

Regarding claim 19, Ge et al. discloses at least one of the hollow, reflective cavities is substantially parabolic in a cross-section from the input surface to the output surface.

Regarding claim 32, Ge et al. discloses the area of its input aperture is less than the area of its output aperture, the input surface is in contact with a light guiding plate, and the index of refraction substantially equal to the index of refraction of the light guide plate (air, refractive index $n=1$, transparent material, refractive index $n=1.5$).

Regarding claim 33, Ge et al. discloses a lens (e.g., 501) formed at the output aperture for at least one the concentrator.

Regarding claim 34, Ge et al. discloses total internal reflection within each the concentrator directs a portion of off-axis light from the input aperture to the output aperture.

Regarding claim 37, Ge et al. discloses an output surface having an array of tapered concentrators, each concentrator having a generally parabolic shape (e.g., column 2, lines 30-45) and a light input aperture and a light output aperture, wherein the input aperture of each of the concentrator is smaller than the output aperture.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ge et al. (USPN 5,839,812).

Regarding claims 40-44, Ge et al. discloses the structural limitations of applicant's claimed invention, explained above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recite mere claiming of a use of a particular structure, which has been clearly disclosed by the prior art reference, Ge et al.

It has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ketchpel (USPN 5,396,406) – thin high efficiency illumination system for display devices

Holman et al. (US 2004/0218390) – high-density illumination system

Hou et al. (USPN 5,839,823) – back-coupled illumination system with light recycling

Prince et al. (USPN 4,799,050) – full color liquid crystal display


Silverstein et al. (USPN 5,959,711) – enhanced off-axis viewing performance of liquid crystal display employing a fiber optic faceplate having an opaquely masked front surface on the front face

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y. Choi whose telephone number is (571) 272-2367. The examiner can normally be reached on Monday-Friday (10:00-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC



JOHN ANTHONY WARD
PRIMARY EXAMINER